



Dart Aerospace Ltd.
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K6A 1K7
Canada

Tel (613) 632-5200

D4766-041
Job Sheet 178314



Part No: D4766-041

Job Qty: 1 ea

Part Name: Skidtube Assembly



Part Weight: 0 lbs

Status: Scheduled

Priority: High

Job Created: 5/29/18

Job Tracking No:

Due Date: 6/22/18

Created By: Jesse White

Type: SOLD

Description:

Note: DWG REV E IPP REV:A 13.04.17 NEW ISSUE DD VERF:JLM IPP REV:B 13.08.08 PB2 DD VERF:JLM IPP
REV:B 13.08.26 PB3 DD VERF:JLM IPP REV:C 13.11.14 AS PER DWG REV.B DD VERF:JLM IPP REV:D
15.06.10 AS PER DWG REV.C DD VERF:JLM IPP REV:E 16.03.23 AS PER DWG REV.D DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		6/22/18	0.00	0.00	Start Up Skid tubes		BE
110	CNC Bend Skid tubes	1 pcs		6/22/18	0.00	1.00	CNC Bend Skid tube		BE
120	Skid tubes	1 pcs		6/22/18	0.00	3.44	Skid tubes-3		BE DAS
140	QC	1 pcs		6/22/18	0.00	0.00	QC5		38
150	HandFinish	1 pcs		6/22/18	0.00	0.62	HandFinish1		SA 18-06-15
160	QC	1 pcs		6/22/18	0.00	0.00	QC7-4		BE
170	Skid tubes	1 pcs		6/22/18	0.00	3.44	Skid tubes-3		BE m69
180	QC	1 pcs		6/22/18	0.00	0.00	QC5		BE
185	Skid tubes	1 pcs		6/22/18	0.00	3.44	Skid tubes-3		BE
188	QC	1 pcs		6/22/18	0.00	0.00	QC5		BE 18-6-27
210	HandFinish	1 pcs		6/22/18	0.00	0.62	HandFinish2		BE 18-06-27
220	Spray Paint	1 pcs		6/22/18	0.00	0.78	Spray Paint	040347	JUN 27 2018
230	QC	1 pcs		6/22/18	0.00	0.00	QC14		BE 18-6-27
260	HandFinish	1 pcs		6/22/18	0.00	0.62	HandFinish4		DAS
270	QC	1 pcs		6/22/18	0.00	0.00	QC5		38
300	Packaging	1 pcs		6/22/18	0.00	0.00	Packaging3-2		BE 18-6-27
310	QC21-SA	1 Ea		6/22/18	0.00	0.00	QC21		DAS JUN 29 2018

Part Op 110 - *****ROUTE NEED TO BE REVISE AS PER THE LATES REV PROCESS***** 1- Bend FWD end as per dwg Descriptions: and folio 2- Cut FWD end as per dwg using DT8185 ***VERIFY MESUREMENT***

120 - 1- Cut Aft end as per dwg D4766 2- Deburr ends 3-Drill Aft & Fwd Cap holes using DT8678 & DT8901***DO NOT OPEN AFT CAP HOLES*** 4- Locate DT _____ Pilot Drill all X-Bolt holes using #30" drill. & Drill Ground wire hole on top of Tube. 5-Drill holes for D5520-1 doubler using DT10309 A & B, locating from 7th and 8th crossbolt holes from aft using .1875 clekos. Spot drill tube using #20 drill (note 10). Remove DT10309 B. Re-install DT 10309 A drill thru tube and doubler using #20 drill (note 10), cleko as you go. Remove .1875 clekos and open holes in tube and doubler to 0.750". Remove doublers and identify orientation. 6-Countersink rivet holes in skid tube detail M ***NOTE*** 29 places only. 6- Open ground wire hole .297" section D-D (1) place and detail "I" (2) place. 7- Open Aft & Fwd Cap holes using 0.208" drill. 8- Deburr holes. 9--Touch up alodine on D5520-1 doublers.

170 - 1-Install doublers using DT10309 B. Shave rivets as required. Detail M. 2- Bond web as per Dwg D4766 & QSI 015 A/R 241 Sika Flex Batch: 138787 Exp Date: DEC 22 2018 start time: 18-06-18 end time: 18-06-19 ***NOTE, 35.9" FROM AFT END AS PER DWG D4766. SHEET 6

185 - 1- Bend aft tube as per dwg VERIFY HEIGHT and record: 8.62 2- Remove bending mark and mark center line on end of tube 3- Drill AFT float holes using DT _____ A,B,C. 4- Open X-Bolt holes to size as per Dwg D4766 and detail K 5- Drill Rivet Holes as per Dwg D4766 Using DT10065 6- Deburr Rivet holes & 0.750" holes and touch up alodine rivet holes only. 7- Seal all faying surfaces using proseal and rivet Doubler as per Dwg D4766. A/R Proseal Batch: 138784 12H CURE TIME START TIME: 18-06-26 NOTE: SHAVE RIVET AFTER 12HRS CURE TIME. 8- Ream holes to finish size and Swage x-bolt spacers as per Dwg D4766 and section C-C 9- Trim/Grind flush per QSI 002 10- Swage x-bolt spacer as per dwg D4766 section G-G. Trim and grind flush. Open thru holes 0.625". 11- Deburr and blow out chips from inside of tube.

210 - Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

220 - 1- Apply Primer as per QSI 005 4.2.1.3.3 and dwg A/R Primer Batch: _____ 2- Paint White as per QSI 005 4.2.2.4 and dwg A/R Paint Batch: _____

260 - 1- Install Ground Wire inserts as per Dwg D4766. 2-Inspect for Foreign objects 3-Wet Install hose sheild D5534-1 section P-P and note 12. A/R Proseal Batch: _____ 12H CURE TIME START TIME: _____ NOTE: SHAVE RIVET AFTER 12HRS CURE TIME. 4- Install Fwd & Aft caps as per Dwg D4766 and Detail "A" & "B". Fastener must be install wet as per note (9). A/R 241 Sika Flex Batch: _____

Exp Date: _____ 5- Wing Walk as per Dwg D4766 and QSI 005 4.4 Batch: _____

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D4766-041-BENT	Extrusion Bent	1 Ea (1 ea)	90-Start up Operation	5078113
D5520-1	Doubler	2 Ea (2 ea)	120-Skidtubes	3045659
CR3212-5-05	Rivet	58 pcs (58 ea)	170-Skidtubes	5061120
CR3213-5-06	Cherry Rivet	10 Ea (10 ea)	170-Skidtubes	FMLB230-1
D5085-1	Web	1 Ea (1 ea)	170-Skidtubes	BH1912
D5534-1	Hose Shield	2 Ea (2 ea)	170-Skidtubes	FLW1203
D2973	Cross Bolt Spacer	2 Ea (2 ea)	185-Skidtubes	5003873
D4686-1	Spacer	11 Ea (11 ea)	185-Skidtubes	5083133
D4753-1	Doubler	22 Ea (22 ea)	185-Skidtubes	5055016
D5304-1	Crossbolt Spacer	2 Ea (2 ea)	185-Skidtubes	5066193-1
MS20601-AD4W3	Rivet	44 Ea (44 ea)	185-Skidtubes	5607279
AEELS-1032-130	Rivnut	3 Ea (3 ea)	260-HandFinish	5068642
AN3C4A	Bolt	3 Ea (3 ea)	260-HandFinish	5057152
AN3C5A	Bolt	2 Ea (2 ea)	260-HandFinish	50716642
AN526C1032R10	Screw	2 Ea (2 ea)	260-HandFinish	5045482
D2965	Cap	1 Ea (1 ea)	260-HandFinish	FLW1203
D2965-3	Cap	1 Ea (1 ea)	260-HandFinish	5026493
NAS1149C0332R	Washer	5 Ea (5 ea)	260-HandFinish	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D4766-041-BENT	1	2	0
120-Skidtubes	D5520-1	2	18	0
170-Skidtubes	CR3212-5-05	58	746	0
	CR3213-5-06	10	81	0
	D5085-1	1	4	0
	D5534-1	2	4	0
185-Skidtubes	D2973	2	32	0
	D4686-1	11	98	0
	D4753-1	22	68	0
	D5304-1	2	31	0
	MS20601-AD4W3	44	871	0
260-HandFinish	AEELS-1032-130	3	0	0
	AN3C4A	3	2,130	0
	AN3C5A	2	1,468	0
	AN526C1032R10	2	186	0
	D2965	1	84	0
	D2965-3	1	34	0
	NAS1149C0332R	5	7,039	0

Revision:
 Inspector:
 Exp Date: 06/08/2018
 Instructions:
 Part: D4766-041
 Job No: 178314
 Serial No/Batch: 5079152



Container No: 5079152

DART
AEROSPACE

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white.jesse

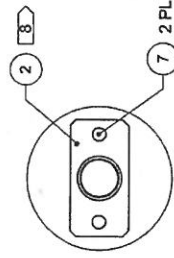


9) INSTALL FASTENERS WET WITH SIKAFLEX -241/-291 OR PROSEAL

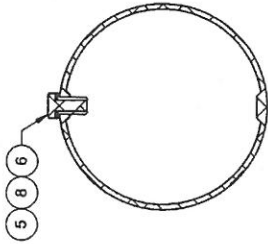
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DRAWN	AJS	
CHECKED	ML	
MFG. APPR.	DP	
DE APPR.	WM	
DATE	17.03.30	TITLE SKIDTUBE SCALE NTS REV. E SHEET 2 OF 7 DRAWING NO. D4766

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2017-08-11
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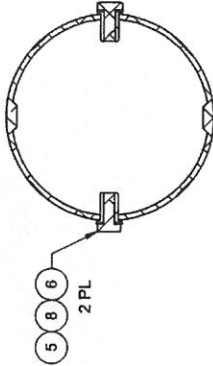
ITEM	QTY	P/N	DESCRIPTION
	1	D4766-043	SKIDTUBE SUB ASSY
1	11	D4686-1	SPACER
2	22	D4753-1	DOUBLER
3	1	D4766-045	SKIDTUBE SUB ASSY
4	2	D5304-1	CROSSBOLT SPACER
5	3	AEIS-1032-130	INSERT
6	3	AN3CA4	BOLT
7	44	MS20601AD4W3	RIVET, BLIND, CSK
8	3	NAS1149C0332R	WASHER



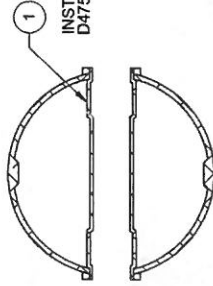
DETAIL E
SCALE 6X
22 PL



SECTION D-D
SCALE 6X



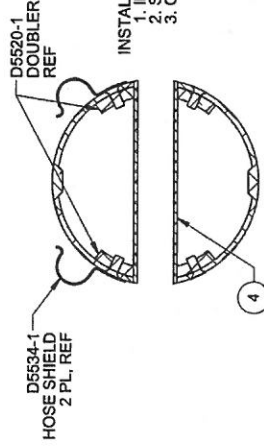
SECTION F-F
SCALE 6X



SECTION C-C
SCALE 8X
11 PL

INSTALL D4686-1 SPACER AFTER INSTALLING
D4753-1 DOUBLERS AS FOLLOWS (11 PL)

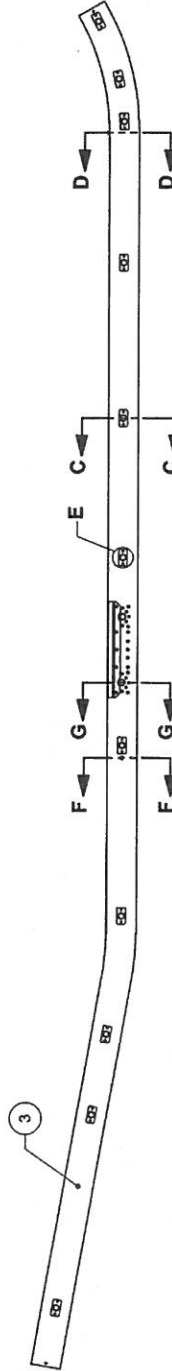
1. INSERT D4686-1 SPACER
2. SWAGE TO Ø0.650 +0.010/-0.000 X 1.0 DEEP PER QSI 002
3. TRIM/GRIND FLUSH PER QSI 002



SECTION G-G
SCALE 6X
2 PL

INSTALL D5304-1 SPACER AS FOLLOWS (2 PL)

1. INSERT D5304-1 SPACER
2. SWAGE TO Ø0.585 +0.005/-0.000 X 1.0 DP PER QSI 002
3. OPEN THRU HOLE TO Ø0.625



D4766-043 SKIDTUBE SUB ASSY

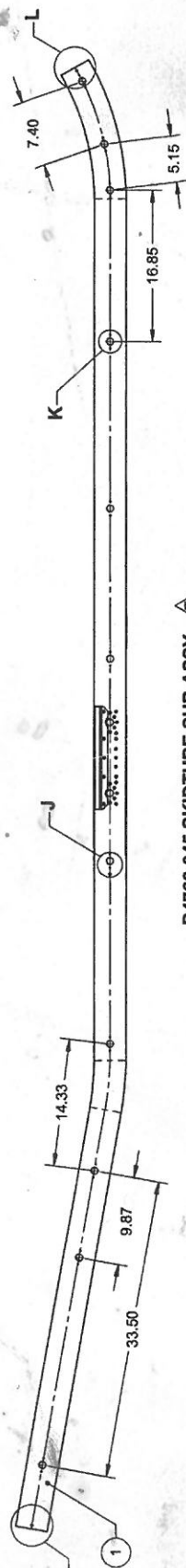
- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME (REF 4.2.1.3.3) AND PAINT WHITE PER DART QSI 005 4.2
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 33.9 lbs
 - 8) SEAL FAYING SURFACES USING PROSEAL P/S 890/1422 OR MIL-S-8802 CLASS B2 SEALANT

DESIGN	AP	AP	DART AEROSPACE USA, INC.
DRAWN	AJS	EUGENE, OR	
CHECKED	ML	DRAWING NO.	
MFG. APPR.	DP	D4766	REV. E
DE APPR.	WM	TITLE	SHEET 3 OF 7
DATE	17.03.30	SKIDTUBE	SCALE
			NTS

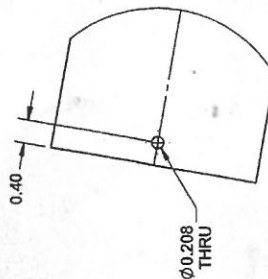
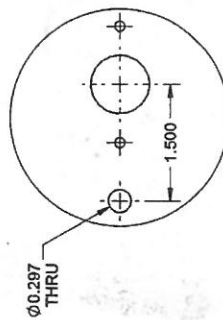
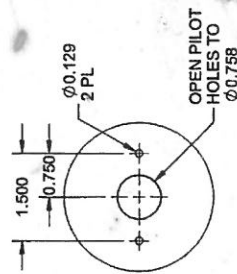
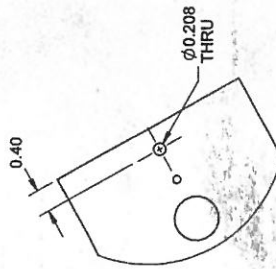
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ITEM	QTY	PIN	DESCRIPTION
	X	D4766-045	SKIDTUBE SUB ASSY
1	1	D4766-1	SKIDTUBE
2	1	D5085-1	WEB
3	2	D5520-1	DOUBLER
4	2	D5534-1	HOSE SHIELD
5	58	CR3212-5-05	CSK RIVET, CHERRY MAX
6	10	CR3213-5-06	RIVET, CHERRY MAX



D4766-045 SKIDTUBE SUB ASSY A



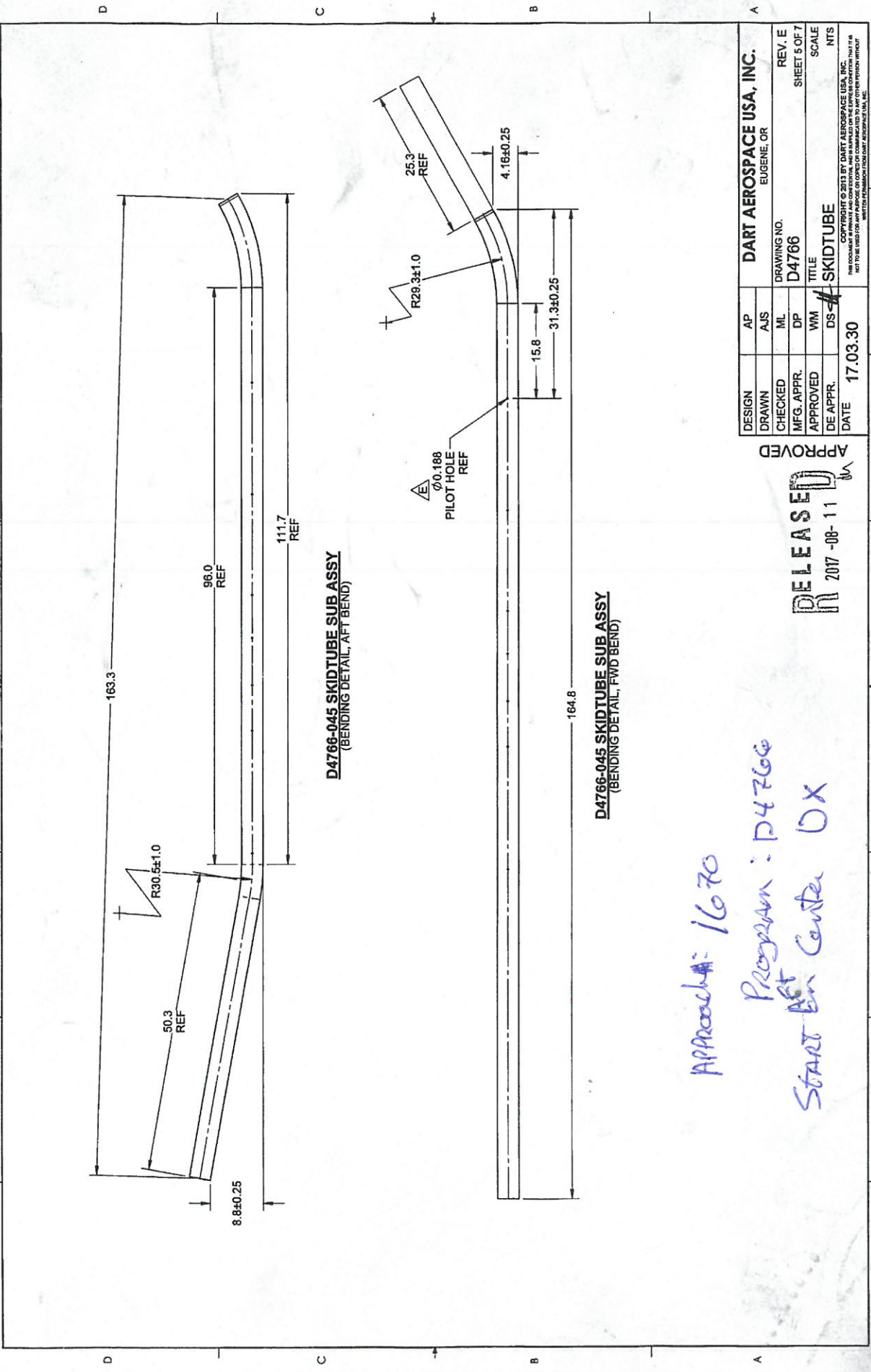
- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005.4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK: SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 32.9 lbs

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CHECKED	ML	DRAWING NO.	REV. E
MFG. APPR.	DP	D4766	SHEET 4 OF 7
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	SKIDTUBE	NTS
DATE	17.03.30		

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1 2 3 4 5 6 7 8



D4766-045 SKIDTUBE SUB ASSY
(BENDING DETAIL, AFT BEND)

D4766-045 SKIDTUBE SUB ASSY
(BENDING DETAIL, FWD BEND)

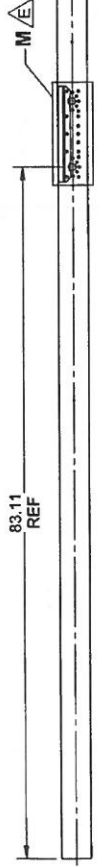
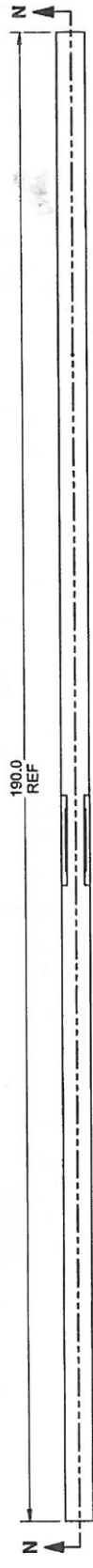
APPROACH: 1670
Program: D4766
Start En Center OX

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MFG. APPR.	DP	D4766	SHEET 5 OF 7
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DE APPR.	DS	SKIDTUBE	NTS
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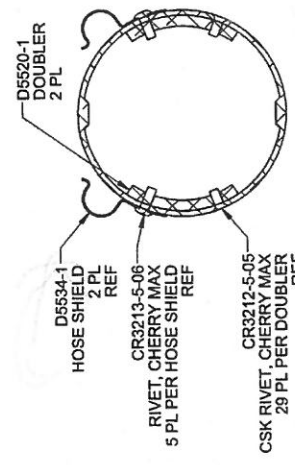
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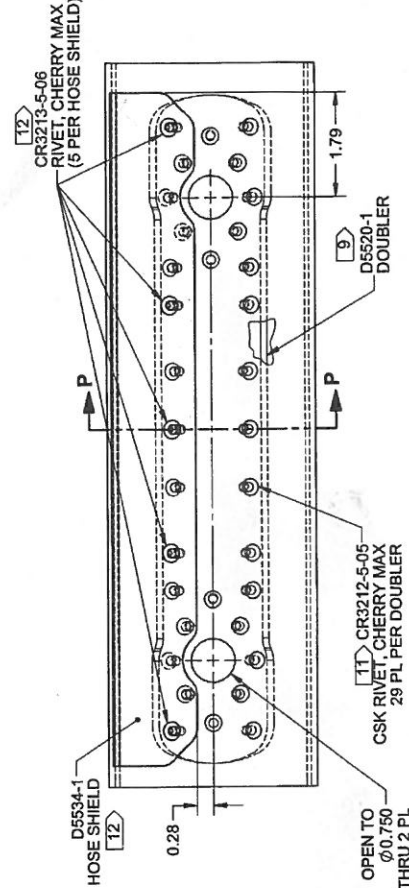
8 D4766-045 SKIDTUBE SUB ASSY (ASSEMBLY DETAIL)



SECTION N-N



SECTION P-P



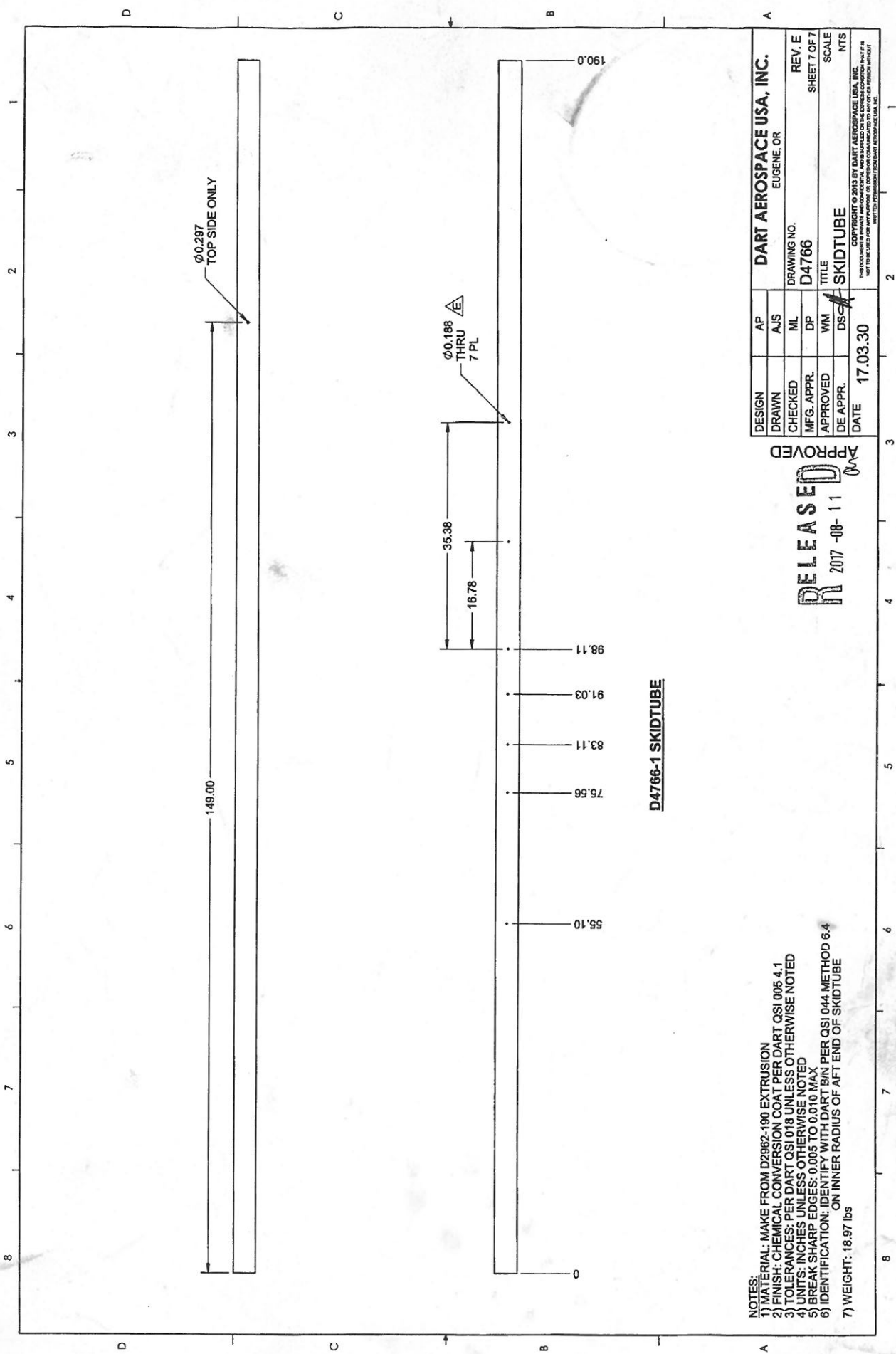
DETAIL M SCALE 7X

- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: N/A
 - 8) INSERT D5085-1 WEB INTO D4766-1 EXTRUSION IN LOCATION SHOWN AND BOND INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX -241/291 ADHESIVE PER DART QSI 015.
 - 9) LOCATE THE D5520-1 DOUBLER USING THE $\varnothing 0.188$ PILOT HOLES ON THE SKIDTUBE AND DOUBLER
 - 10) LOCATE QTY (34) HOLES ON THE SKIDTUBE PER D5520-1 DOUBLER AND DRILL $\varnothing 0.161$ THRU SKIDTUBE AND DOUBLER USING DT 10309
 - 11) COUNTERSINK THE SKIDTUBE $\varnothing 0.286 \times 100^\circ$ (29 PL) AND INSTALL EACH D5520-1 DOUBLER USING QTY (29) CR3212-5-05 CSK RIVETS
 - 12) FOR INSTALLATION OF THE D5534-1 HOSE SHIELD:
 - INSTALL ON FINISHED (PAINTED) SKIDTUBES ONLY
 - COAT THE FAYING SURFACES WITH PROSEAL 890/1422.
 - INSTALL THE QTY (5) CR3213-5-06 RIVETS WET USING PROSEAL 890/1422

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MFG. APPR.	DP	D4766	SHEET 6 OF 7
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DE APPR.	DS	SKIDTUBE	NTS
DATE	17.03.30		

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D4766-1 SKIDTUBE

- NOTES:
- 1) MATERIAL: MAKE FROM D2862-190 EXTRUSION
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY WITH DART B/N PER QSI 044 METHOD 6.4 ON INNER RADIUS OF AFT END OF SKIDTUBE
 - 7) WEIGHT: 18.97 lbs

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R 2017-08-11
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MFG. APPR.	DP	D4766
APPROVED	WM	REV. E
DE APPR.	DS	SHEET 7 OF 7
DATE	17.03.30	TITLE
		SKIDTUBE
		SCALE
		NTS

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